



March 9, 2016

Edward J. Messina, Director  
Monitoring, Assistance, and Media Programs Division, US EPA  
1200 Pennsylvania Avenue, N. W.  
Washington, DC 20460

Re: Applicability Determination Request

Mr. Messina,

As a result of recent investigations and information, DEQ is reevaluating the applicability of 40 CFR Part 63 Subpart SSSSSS Area Source NESHAP (6S) to two specific facilities, the Uroboros and Bullseye glass manufacturing facilities, in Portland, Oregon. Subpart 6S controls air emissions from glass manufacturing plants that are area sources and which emit urban hazardous air pollutant metals (arsenic, cadmium, chromium, lead, manganese, and nickel) and which meet the relevant applicability criteria outlined in the rule.

The two relevant applicability criteria in the rule are:

1. §63.11448 (a) *A glass manufacturing facility is a plant site that manufactures flat glass ... by melting a mixture of raw materials ... to produce molten glass and form the molten glass into sheets, containers, or other shapes.*
2. §63.11448 (c) *[A] glass manufacturing facility [that] uses one or more continuous furnaces to produce glass that contains compounds of one or more glass manufacturing metal HAP ... as raw materials in a glass manufacturing batch formulation.*

Additionally, §63.11449 details that the subpart applies to existing or new furnaces (as elsewhere defined in the subpart):

*That [are] located at a glass manufacturing facility and satisfies the requirements specified in paragraphs (a)(1) through (3) of this section.*

*(1) The furnace is a continuous furnace, as defined in §63.11459.*

*(2) The furnace is charged with compounds of one or more glass manufacturing metal HAP as raw materials.*

*(3) The furnace is used to produce glass, which contains one or more of the glass manufacturing metal HAP as raw materials, at a rate of at least 45 Mg/yr (50 tpy).*

Under the definitions of the rule both Bullseye and Uroboros meet the applicability test under §63.11448 (a); and the furnace criteria of §63.11449 (2) and (3) are clear and unambiguous in their application to the respective facilities.

The essential question is the applicability of the subpart based on the definition of a “continuous furnace” which is defined, under §63.11459 as “*a glass manufacturing furnace that operates continuously except during periods of maintenance, malfunction, control device installation, reconstruction, or rebuilding*”.

Bullseye and Uroboros both primarily use a furnace type called a “day tank.” The day tanks resemble a smaller scale version of the larger production furnaces used in the container and float glass industries. They are built on-site and are composed of several different types of refractory (brick) material. The general design is a cube with a rounded (crown) top. It is filled, using various means, with raw materials and glass ingredients which rest at the bottom of the furnace; gas and air, or oxygen, are fired just above the maximum glass line. When the glass is finished melting, it is removed with a ladle. The furnace exhaust is then vented out of a flue. As part of normal operations, and influenced by product specification requirements, the facilities remove as much glass as possible before starting the next batch.

The day tanks at Bullseye are primarily fired using oxygen and natural gas. The day tanks at Uroboros use air and natural gas and some have a heat exchanger (recuperator) to pre-heat combustion air. The combustion happens above the raw materials/glass level and heat transfer happens through the surface of the glass, where there is also volatilization of raw materials. Off gassing from this volatilization and off gassing from chemical reactions within the glass are exhausted out the stack with the combustion gases.

Temperatures in the day tank are, broadly and generally, around 2,500°F during melting. The furnaces have the ability to be slightly lower in temperature while glass is ladled out; after being emptied, they are heated back up to the 2,500°F range before being charged with new raw materials. Both facilities melt on approximately a 24 hour schedule with, generally, 5-8 hours to add raw materials, 6-8 hours to cook, and 6-8 hours to ladle glass out of the day tank.

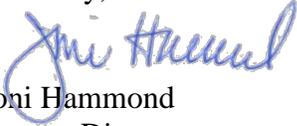
The furnaces are kept hot for 350 to 500 production days to be available for melting. After this rough timeframe the furnaces are cooled to ambient temperature, completely dismantled, and are re-bricked (all of the refractory brick is replaced) before it is reheated and put back in operation. Once the furnace begins operation after a re-bricking, the furnace is kept above 2,000°F by constantly firing the burners. These furnaces are only cooled to ambient temperatures when they are re-bricked. The day tanks primarily melt batches of glass sequentially, with, potentially, a brief reheat period from the lower temperatures at the end of a batch (approximately 2,200°F). The day tanks can be idled down to 2,000°F if they are not needed to melt glass.

Overall, Bullseye melts glass from Sunday mid-day to Friday evening; Uroboros generally operates about 4 consecutive days per week (M-Th or T-F). Furnaces can also be idled when not in use and at other times for various reasons (e.g. holidays or customer product demands, among others).

Based on the nature of the furnace operations DEQ is requesting clarification on the interpretation of Subpart SSSSSS as it applies to the processes at the facilities, and as described above.

DEQ also wants to ensure that the glass manufacturing facilities with similar processes as Bullseye and Uroboros are regulated in a fair and consistent manner throughout the EPA regions. DEQ therefore requests that EPA evaluate glass manufacturing facilities with similar processes as Bullseye and Uroboros in light of EPA's response to this request; and that EPA shares its intention and plan to do so.

Sincerely,



Joni Hammond  
Deputy Director

cc: Katie McClintock, US EPA (*via email*)  
Paul Koprowski, US EPA (*via email*)  
Leah Feldon, Oregon DEQ (*via email*)  
Nina DeConcini, Oregon DEQ (*via email*)  
David Monro, Oregon DEQ (*via email*)  
Jaclyn Palermo, Oregon DEQ (*via email*)